

Graphical Presentation of Data

Introduction

A graphical representation is a visual display of data and statistical results. It is more often and effective than presenting data in tabular form. There are different types of graphical representation and which is used depends on the nature of the data and the nature of the statistical result.

Purpose

- ▶ Compare categorical data
- ▶ Compare series of data over time
- ▶ Percentage of total comparisons
- ▶ Relationship between two variables
- ▶ Relationship between three variables

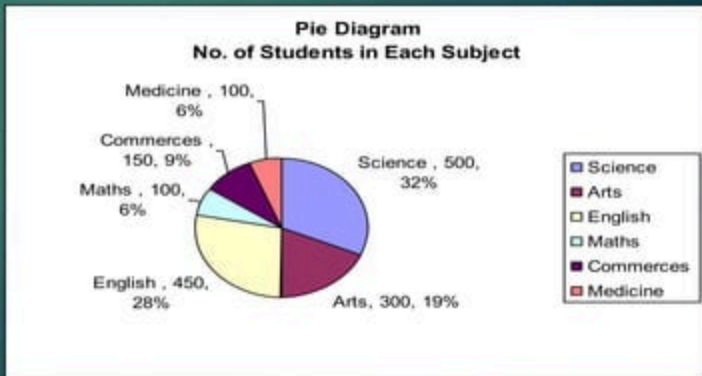
Types of Graphical Presentation

There are many types of Graphical presentation-

- Circle or Pie Diagram
- Bar Diagram
- Comparative Bar Diagram
- Histogram
- Frequency polygon
- Cumulative frequency curve or Ogive

Circle or Pie Diagram

- ▶ A pie chart displays data as a percentage of the whole. Each pie section should have a label and percentage. A total data number should be included.



Advantages

- Visually appealing
- Summarize a large data set in visual form
- Be visually simpler than other types of graph
- Shows percent of total for each category

Disadvantages

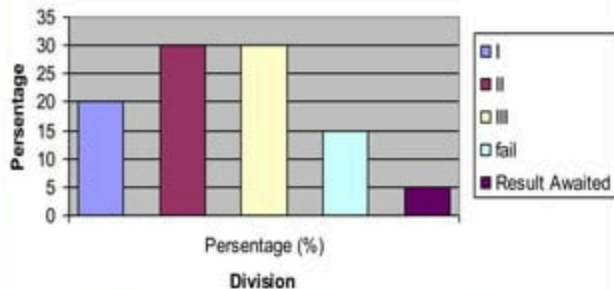
- No exact numerical data
- Hard to compare 2 data sets
- Total unknown unless specified
- Use only with discrete data

Bar Diagram

- ❖ Bar graph are commonly used to show the number or proportion of nominal or ordinal data which possess a particular attribute. They depict the frequency of each category of data point as a bar rising vertically from the horizontal axis.

Bar Diagram

Bar Diagram
M.A (Psychology) Student Result



Division	Percentage (%)
I	20
II	30
III	30
fail	15
Result Awaited	5

Comparative Bar Graph

- ❖ A graph using parallel bars of varying lengths, as to illustrate comparative costs, exports, birth-rates, etc.

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Advantages

- ▶ Can easily compare two or three data sets.

Comparative Bar Graph

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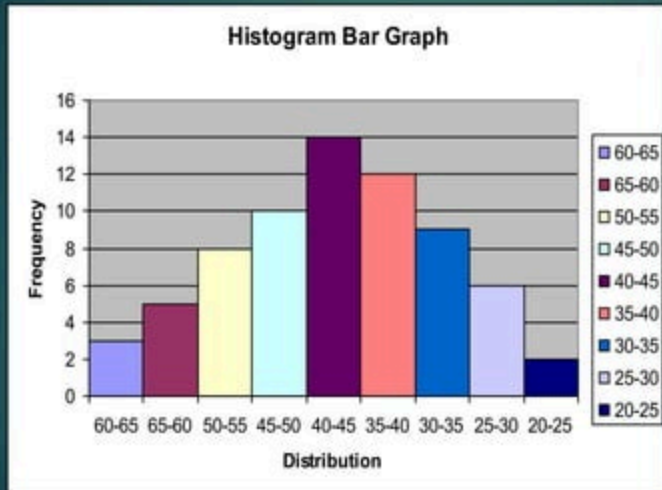
Division	Boys	Girls
I	20	30
II	30	35
III	30	20
Fail	15	10
Others	5	5

Histogram Graph

- ▶ A histogram displays continuous data in ordered columns. Categories are of continuous measure such as time, inches, temperature, etc.

Histogram Graph

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CI	F
60-65	3
65-60	5
50-55	8
45-50	10
40-45	14
35-40	12
30-35	9
25-30	6
20-25	2

Advantages

- Visually strong
- Can compare to normal curve
- Usually vertical axis is a frequency count of items falling into each category

Disadvantages

- Cannot read exact values because data is grouped into categories
- More difficult to compare two data sets
- Use only with continuous data

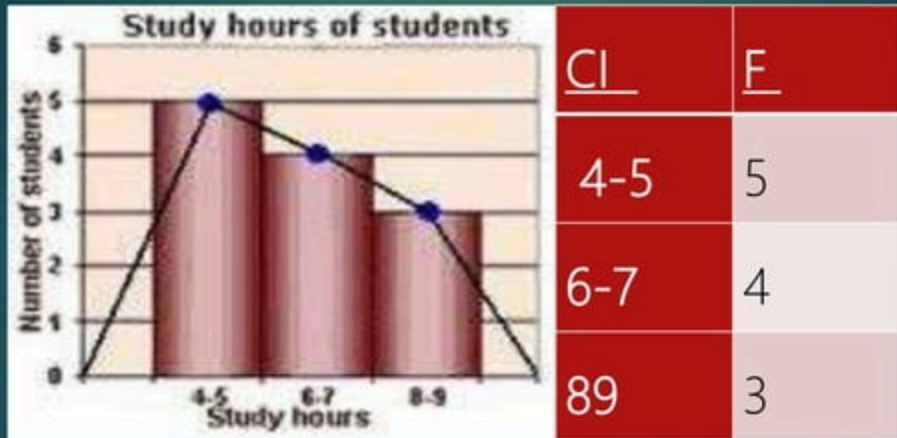
Frequency Polygon

- A frequency polygon can be made from a line graph by shading in the area beneath the graph. It can be made from a histogram by joining midpoints of each column.

Frequency Polygon

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Advantages

- Visually appealing

Disadvantages

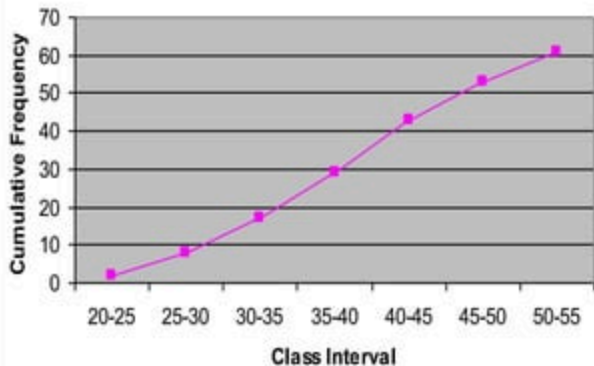
- Anchors at both ends may imply zero as data points.
- Use only with continuous data.

Cumulative Frequency Polygon Graph

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Cumulative Frequency Graph (Cure)



CI	F	CF
20-25	2	2
25-30	6	8
30-35	9	17
35-40	12	29
40-45	14	43
45-50	10	53
50-55	8	61

Conclusion

- ▶ A diagram must be attractive, well proportioned, neat and pleasing to the eyes.
- ▶ Graphical forms makes it possible to easily draw visual impression of data.
- ▶ Graphical presentation of data enhances our understandings.
- ▶ It makes comparisons easily.
- ▶ This kind of method create an imprint on mind for long period of time.
- ▶ They should be geometrically accurate.

A close-up photograph of a person's right hand holding a silver ballpoint pen, writing the words "Thank You!" in a fluid, black cursive script on a white surface. The pen is positioned at the end of the word "You", with the ink trail still visible. The background is a plain white surface with some faint, light blue circular shadows. In the top right corner, there is a small red rectangular box containing the number "23".

Thank You!